



Agency for Healthcare Research and Quality
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NATIONAL
GUIDELINE
CLEARINGHOUSE

General

Guideline Title

Care of the adult patient with a brain tumor.

Bibliographic Source(s)

American Association of Neuroscience Nurses (AANN). Care of the adult patient with a brain tumor. Chicago (IL): American Association of Neuroscience Nurses (AANN); 2014. 48 p. [248 references]

Guideline Status

This is the current release of the guideline.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- [November 6, 2013 – Low Molecular Weight Heparins](#) : The U.S. Food and Drug Administration (FDA) is recommending that health care professionals carefully consider the timing of spinal catheter placement and removal in patients taking anticoagulant drugs, such as enoxaparin, and delay dosing of anticoagulant medications for some time interval after catheter removal to decrease the risk of spinal column bleeding and subsequent paralysis after spinal injections, including epidural procedures and lumbar punctures. These new timing recommendations, which can decrease the risk of epidural or spinal hematoma, will be added to the labels of anticoagulant drugs known as low molecular weight heparins, including Lovenox and generic enoxaparin products and similar products.

Recommendations

Major Recommendations

The levels of recommendation (1-3) and the data quality classifications (I-IV) are defined at the end of the "Major Recommendations" field.

Overview

Epidemiology

Nurses should be aware that knowledge about epidemiology of primary brain tumors is evolving (Level 3). Nurses should gather epidemiologic

information when conducting an assessment (Level 3).

Nurses should be aware that as survival from primary cancers improves, the incidence of brain metastases increases (Level 2). Routine screening for brain metastases is not recommended unless a patient has non-small-cell cancer or melanoma (Level 1). Nurses should gather epidemiologic information when conducting an assessment (Level 3).

Survival varies widely and nurses should educate patients regarding the meaning of published survival rates and the implications for individual care (Level 1). The nurse's role also focuses on facilitating a positive yet realistic outlook for individual patients (Level 3).

Nurses should be aware that the only known risk factor for development of a brain tumor is previous exposure to ionizing radiation (and they should educate patients to avoid ionizing radiation when possible [Level 1]). Nurses should perform a comprehensive and thorough assessment to identify potential risk factors in patients with a brain tumor (Level 3).

Classification

Nurses should be aware of the nomenclature of tumors as well as their histopathologic classification so they can educate patients and families accordingly (Level 2). Nurses can use their understanding of tumor location to direct assessment (Level 3).

Pathophysiology

Nurses should be aware that the significance of symptom clusters in people with brain tumors requires further elaboration/delineation. Nurses should be able to distinguish between general and focal symptoms (Level 3). Nurses should perform a focused assessment based upon tumor location and related involved anatomy (Level 3). Nurses should use knowledge of the ways that tumors cause symptoms when educating patients about actual or anticipated symptoms (Level 3).

Peritumoral Edema

Nurses should recognize and report evidence of cerebral edema and increased intracranial pressure (ICP) promptly (Level 3). Nurses should administer steroids or osmotic diuretics as ordered and monitor for adverse effects (Level 2). Nurses should assess the patient's pain and administer analgesia as needed (Level 3).

Diagnosis

Imaging Techniques

Nurses should monitor serum blood urea nitrogen and creatinine prior to contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI) procedures and report abnormalities (Level 1).

Nurses should anticipate necessary diagnostic tests and educate patients and families (Level 3). Nurses should assess patients prior to MRI for any metal objects or implants and evaluate kidney function when contrast-enhanced CT or MRI is anticipated (Level 3). Nurses should administer premedications as needed in a timely fashion (Level 3).

Surgery

Biopsy

Nurses should monitor patients after biopsy for neurological deterioration and report neurological changes promptly (Level 3). Nurses should educate patients and families about when the final pathology will be available and dates of postoperative follow-up appointments to discuss the plan of care (Level 3).

Preoperative Management

After a tumor is embolized, nurses should monitor the patient's neurologic status. In addition, nurses should assess the neurovascular status of extremities (groin site, vital signs, distal pulses) and watch for development of a hematoma (Level 3).

Intraoperative Management

Perioperative nurses should keep the location of the tumor and the surgical approach in mind when positioning patients (Level 3).

Special Procedures

Circulating nurses on the neurosurgical team should establish a comfortable rapport with patients before the procedure to help them when they are

awake by answering questions and calming fears (Level 3).

Postoperative Complications of Craniotomy

Nurses should anticipate signs of deteriorating neurologic status (Level 3). Nurses should report any deterioration of the patient to the neurosurgeon (Level 3).

Nurses should maintain blood pressure parameters as ordered and administer anti-hypertensives as prescribed (Level 3).

Nurses should assess deficits by correlating them with the anatomic location of the tumor (Level 3). Nurses need to ensure that patients are evaluated by the physiatrist and therapists to establish their baseline and set realistic goals. They need to involve families so everyone can work toward the same discharge goals (Level 3).

Nurses should monitor patients who have had skull base surgery or transsphenoidal surgery for cerebrospinal fluid (CSF) leaks (Level 3).

Nurses should monitor for seizure activity and adverse antiepileptic drug (AED) effects in patients who undergo postoperative craniotomy. If seizure activity occurs, they should notify the appropriate provider and begin prescribed management (Level 3).

Nurses should monitor patients for infection. Patients may be discharged from the hospital before infection develops, so they must be instructed to call their physician to report any drainage from the incision or fever higher than 101.5° F (38.6° C) (Level 3).

Nurses should monitor for decreased neurological status and symptoms of meningitis. Nurses caring for a patient with possible meningitis should always use isolation procedures until communicable bacterial meningitis is ruled out (Level 1).

Nurses should observe for hydrocephalus and monitor ICP and CSF laboratory results as ordered by the neurosurgeon (Level 3).

Nurses should be aware of the high risk for deep venous thrombosis (DVT) in patients with brain tumors. Nurses should begin a DVT prevention program on postoperative day 1 (Level 3).

Nurses should assess for postoperative pain. Pain medication should be given often enough to keep pain at a reasonable level for the patient (Level 3).

Nurses should offer pain medication and antiemetics for patients who undergo a posterior fossa operative approach (Level 3). Nurses or physical therapists should ambulate patients with assistance (Level 3).

Nurses should keep the head of the bed elevated to decrease periorbital edema unless contraindicated (Level 3).

Nurses should lay the patient flat if intracranial hypotension is suspected. If a lumbar drain is present, close or remove the drain (Level 3).

Support

Nurses need to provide support, answers, comfort, and appropriate resources for patients with brain tumors and their families (Level 3).

Radiation Therapy (RT)

Biologic Effects of Radiation

Nurses should use information on biologic effects of radiation as a framework with which to conduct assessments and provide patient education (Level 3).

RT Techniques

Nurses should use information about RT techniques to develop a plan of care for patients undergoing brain irradiation (Level 3). They also should use information on brain RT techniques to provide patient-specific education (Level 3). Nurses should explore patient and family understanding of brain RT options in conjunction with providers to ensure informed decision making (Level 3).

Decisions About Radiotherapy

Nurses should function within a team to ensure safety and integrity of the RT plan for patients with brain tumors (Level 3). Nurses should be aware of radiation dose and fractions based upon tumor type (Level 1).

Nurses should be knowledgeable about the role of radioprotective and radiosensitizing agents in patients undergoing brain radiation because they are under current research protocols (Level 3).

Nursing Interventions

Nurses should assess patients undergoing brain RT for specific adverse effects at acute, subacute, and delayed time frames (Level 1). Nurses should develop problem-focused interventions to address specific adverse effects experienced by patients undergoing brain RT (Level 2). Nurses should educate patients undergoing brain RT (and their families) about potential adverse effects and how to manage those problems (Level 2).

Chemotherapy

Chemotherapy for Newly Diagnosed High-Grade Glioma (Anaplastic Gliomas/Glioblastoma)

Nurses should know that temozolomide is a first-line chemotherapeutic agent for newly diagnosed high-grade gliomas (Level 1). Nurses should be aware that patients with high-grade glioma containing a methylated O6-methylguanine-DNA methyltransferase (MGMT) promoter may respond better to treatment with temozolomide, whereas patients who do not have a methylated MGMT promoter may not experience such benefit (Level 1).

Nurses should practice prevention strategies for nausea and vomiting and engage patients in behavioral therapies such as relaxation, hypnosis, and guided imagery. Nurses should also monitor white blood cell (WBC) and platelet counts, address constipation, monitor and treat headache, and assist the patient with developing strategies to combat fatigue (Level 3).

Chemotherapy in Recurrence of High-Grade Glioma

Bevacizumab (Avastin)

Nurses should be aware that bevacizumab can be administered to treat recurrence of high-grade gliomas (Level 2). With the administration of bevacizumab, nurses should monitor urinalysis for suspected proteinuria and monitor blood pressure by checking vital signs at baseline and with each clinic visit. Nurses may need to establish home blood pressure routines while antihypertensive medications are adjusted (Level 3). Nurses should assess for proper wound healing following surgery, signs and symptoms of DVT and pulmonary embolism (PE), and apply ice to the puncture site after infusion (Level 3).

Nitrosureas

Nurses should administer antiemetics before and during drug administration when patients are taking nitrosurea drugs; apply ice to the puncture site; monitor weekly laboratory analysis, especially WBC and platelet counts; obtain periodic chest X rays; and monitor for respiratory, liver, and kidney dysfunction (Level 3).

Carmustine Polymer Wafer (Gliadel Wafer)

Carmustine polymer wafers may prolong survival when implanted into the resection cavity at the time of surgery for high-grade gliomas (Level 2). Nurses should monitor patients for seizures and signs of infection and assess for adequate wound healing (Level 3).

Lomustine (CCNU)

Nurses should administer antiemetics as needed; monitor weekly laboratory analysis, especially WBCs and platelets; obtain periodic chest X rays; and monitor for respiratory, liver, and kidney dysfunction (Level 3).

Platinum Compounds

Nurses should administer antiemetics as necessary if a patient is taking a platinum-based chemotherapeutic agent. They should assess for numbness or tingling of fingers and toes and hearing loss, monitor for electrolyte imbalance including intake and output, and encourage fluid intake. With carboplatin administration, nurses should monitor complete blood count (CBC). Nurses should consider an intradermal skin test after multiple doses of carboplatin to assess for hypersensitivity (Level 3).

Procarbazine (Matulane)

Nurses should administer antiemetics as needed; monitor weekly CBC; maintain good oral hygiene; monitor periodic chest X rays; assess for respiratory problems; assess peripheral nerve function; and teach avoidance of foods high in tyramine that can contribute to hypertension such as beer, red wine, cheese, bananas, eggplant, and avocados (Level 3).

Vincristine (Oncovin or Vincasar PFS)

Nurses should assess for abdominal pain or cramping and instruct patients to report constipation if it occurs. Patients and nurses should be alert to constipation complications such as fecal impaction. Nurses should encourage high fluid intake and a high-fiber diet. In addition, nurses should

assess for numbness and tingling of fingers and toes (Level 3).

Topoisomerase Inhibitors

When topoisomerase inhibitors are given, nurses should consider administering an antiemetic and CBC monitoring. They should discuss with the patient possible hair loss and coping strategies with support of body image. Replacement of fluid and electrolytes, including potassium, may be necessary because of possible diarrhea. Nurses should administer medication as appropriate for both acute and delayed diarrhea (Level 3).

Etoposide (VePesid or VP-16)

Nurses should premedicate patients with antiemetics and continue prophylactically after drug administration. Nurses should also monitor WBCs and platelets and assess for signs of bleeding secondary to low platelets, blood in urine or stools or black tarry stools, bleeding gums, and easy bruising. Nurses should discuss with patients possible hair-loss and coping strategies, assess for numbness and tingling of fingers and toes, observe the patient's mouth for signs of ulceration, monitor aspartate aminotransferase (AST)/alanine aminotransferase for hepatotoxicity, obtain baseline blood pressure before IV administration, and check blood pressure every 15 minutes during infusion to monitor for hypotension (Level 3).

Clinical Trials in Chemotherapy

Nurses should provide educational materials as appropriate and ensure informed consent is obtained if a patient decides to participate in a clinical trial. Nurses should also be aware that treatment with carmustine wafer, reradiation, or multiple systemic therapies may influence eligibility in some clinical trials (Level 3).

Chemotherapy for Central Nervous System (CNS) Lymphoma

For patients receiving methotrexate for CNS lymphoma, nurses should administer an antiemetic as needed, promote good oral hygiene by encouraging patients to follow oral care protocols, and obtain periodic chest X rays (Level 3).

Patient and Family Education

Nurses should assess for adverse effects related to chemotherapeutic management of brain tumors and provide the appropriate interventions discussed above. Nurses should provide patients and families with education and guidance throughout the brain tumor treatment process and anticipate that psychosocial and emotional needs may evolve during the course of treatment (Level 3).

Nurses should provide written and verbal instructions and educate patients regarding oral care. They should emphasize core elements of an oral care protocol and verify understanding with return explanation and demonstration (Level 2).

Nurses should address the potentially debilitating problem of chemotherapy-related cognitive impairment. If a patient exhibits signs of cognitive impairment, initiate nonpharmacologic and/or pharmacologic interventions as described above (Level 3).

Nurses need to focus on patient education by ensuring patient and caregiver understanding of the importance of adhering to the chemotherapeutic agent regimen for optimal treatment. Nurses can promote the use of medication reminders and self-management of symptoms from adverse effects to support adherence to the regimen. Nurses should provide verbal and written instructions including the name of each medication, dose, and schedule; a calendar to show which days the medication is taken and breaks; and how the drug is taken (Level 3).

Novel Therapies for Primary Malignant Brain Tumor

Nurses should be aware that use of electrical tumor treatment fields may be considered a comparable treatment option to chemotherapy for patients with recurrent malignant glioma, particularly when hematologic, infectious, or gastrointestinal (GI) toxicities limit treatment options (Level 1). When tumor treatment fields are used, nurses should assess the skin for topical dermatitis (Level 1). Nurses should educate patients about measures to improve comfort and compliance with the system (Level 3).

Vaccine Immunotherapy for Brain Tumors

Nurses should be knowledgeable about immune-based brain tumor therapies currently in clinical trials (Level 3).

Symptom Management

Vasogenic Edema

Nurses should be aware of the potential side effects of steroids and provide ongoing assessment of symptoms. Nurses should work with the healthcare team and caregivers to manage these symptoms (Level 2).

Seizures

Nurses should be familiar with the dosing and potential side effects of AEDs used for patients with tumors. Patient and caregiver/family education should include correct use, potential side effects, and what to do in the event of a seizure (Level 3).

Venous Thromboembolism (VTE) (DVT and PE)

Nurses should work to decrease VTE risk, monitor patient symptoms, report any concerns to a provider, and administer medication as ordered (Level 2). Patients and caregivers/family members should be taught signs and symptoms and when to call the healthcare provider (Level 3).

Nausea and Vomiting

Nurses should provide an appropriate antiemetic regimen as prescribed (Level 1). Nurses should monitor the effectiveness of the pharmacologic and nonpharmacologic regimen (Level 2).

Cognitive Dysfunction

Nurses should assess for cognitive dysfunction as a symptom of the overall disease state (Level 2). Nurses should recommend neuropsychological testing in specific cases (Level 3). Nurses need to be aware of interventions that will help patients cope with cognitive changes (Level 3).

Fatigue

Nurses should assess for fatigue throughout the trajectory of care (Level 1). Nurses should provide education for self-management and encourage psychosocial support (Level 3).

Distress

Nurses should recognize and assist with the management of patient distress, which should be part of the overall treatment plan for people with cancer (Level 2).

Body Image

Nurses should be aware of the effect of physical changes and offer strategies to decrease the impact of changes on the patient (Level 3).

Rehabilitation

Rehabilitation has been shown to be effective for patients with brain tumors (Level 2). Nurses should facilitate referrals and encourage patient participation (Level 2).

Caregivers and Family Members

Nurses are a primary source of support for caregivers. They should provide information regarding the diagnosis, side effects of treatment, and medication schedules. Nurses should assess caregiver strain and burden and make appropriate referrals. Active listening to the concerns of the caregiver in itself may be therapeutic. Nurses can direct caregivers to other sources of support such as professional and community resources (Level 3).

Survivorship and End of Life

Persisting Symptoms

Nurses should be aware that patients may experience ongoing problems (Level 2). Survivors should be assessed for persistent symptoms even if not in active treatment (Level 2). Nurses should work with healthcare team members to manage persistent symptoms (Level 2). The etiology of progressive neurologic decline in the absence of disease or treatment effects requires further study (Level 3). Referral should be made for rehabilitation for functional and cognitive deficits (Level 2). Nurses need to be aware that rehabilitation may be tiring and frustrating to survivors. Nurses should refer patients and their families to support groups (Level 3).

Returning to Work

Nurses should work with brain tumor survivors and their employers to modify factors that affect ability to work and develop work setting innovations that accommodate their limitations (Level 1).

Family Dynamic after a Brain Tumor Diagnosis

Nurses should educate families of patients with brain tumors about anticipated deficits and approaches to managing those deficits (Level 2). Nurses should refer patients with brain tumors and their families to support groups (Level 3).

Palliative and End-of-Life Care Considerations

Nurses should encourage a multidisciplinary approach to palliative care early in the disease course for patients with malignant brain tumors (Level 2).

End-of-Life Needs and Preferences

Nurses should encourage patients with malignant brain tumors to appoint a surrogate decision maker (Level 1). Nurses should encourage patients with malignant brain tumors to express end-of-life wishes in advance (Level 2). Nurses should consider patients' end-of-life preferences and spiritual needs in planning care (Level 1). Nurses should educate patients and families about the process of dying and the role of palliative and hospice care (Level 2).

End-of-Life Symptom Management

Nurses should identify signs and symptoms of end of life early and maintain a therapeutic environment to minimize delirium and pain and keep patients in their homes as long as possible (Level 3). Nurses should use questionnaires to assess each symptom separately and describe the meaning of each symptom for the individual patient (Level 1). Nurses should observe for seizures and consider alternative routes for AED administration (Level 2). Hospice kits that include emergency seizure management drugs may decrease the need for emergency care or hospitalization (Level 2). Assessment tools to identify end-of-life symptoms are lacking. Nurses should screen for drug interactions that may adversely affect life quality at end of life (Level 2).

Caregiver and Family Support at End of Life

Nurses should recognize that caregivers experience stress and are burdened by the end-of-life process (Level 1). Nurses should assess caregiver perception of the meaning of the illness and impending death (Level 1). Nurses should identify sources of support for the caregiver and facilitate mobilization of those supports at end of life (Level 1). Nurses should assess caregiver risk for bereavement problems (Level 1).

Additional End-of-Life Interventions

Nurses should consider use of a palliative care team for symptom management (Level 1). Nurses should facilitate end-of-life completion and preparation discussions with patients (Level 2).

Definitions:

Data Quality Classification

Class I: Randomized controlled trials (RCTs) without significant limitations or meta-analysis

Class II: RCTs with important limitations (e.g., methodological flaws or inconsistent results) and observational studies (e.g., cohort or case-control)

Class III: Qualitative study, case study, or series

Class IV: Evidence from expert committee reports and expert opinion of the American Association of Neuroscience Nurses (AANN) guideline panel; standards of care and clinical protocols that have been identified

Levels of Recommendation

Level 1: Recommendations are supported by class I evidence.

Level 2: Recommendations are supported by class II evidence.

Level 3: Recommendations are supported by class III and IV evidence.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Brain tumor

Guideline Category

Counseling

Diagnosis

Evaluation

Management

Rehabilitation

Risk Assessment

Treatment

Clinical Specialty

Neurological Surgery

Neurology

Nursing

Oncology

Intended Users

Advanced Practice Nurses

Hospitals

Nurses

Guideline Objective(s)

- To offer evidence-based recommendations on nursing activities that have the potential to maximize outcomes for adult patients with brain tumors
- To review and evaluate literature about brain tumors, with a focus on the adult patient, and to create a reference for neuroscience nurses who care for patients with brain tumors throughout their lifespan across the continuum of care
- To help nurses provide consistent, current, and evidence-based care to patients with brain tumors and their families

Target Population

Adult patients with brain tumors

Interventions and Practices Considered

Diagnosis/Evaluation/Risk Assessment

1. Gathering epidemiological information when conducting patient assessments
2. Facilitating a positive yet realistic outlook for patients
3. Comprehensive risk factor assessment
4. Histopathologic classification of tumors
5. Focused symptom assessment
6. Recognition and reporting of evidence of cerebral edema and increased intracranial pressure (ICP)
7. Assessment of pain and administration of analgesia as needed
8. Monitoring serum blood urea nitrogen and creatinine prior to contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI)
9. Anticipation of diagnostic tests and administration of pre-test assessments/pre-medications

Treatment/Management

1. Post-biopsy monitoring and education of patients and families
2. Post-operative management of embolization (neurologic and neurovascular status)
3. Intraoperative management
4. Establishment of rapport with patients before special procedures (cortical brain mapping)
5. Management of postoperative complications of craniotomy
6. Providing patients and families with support/comfort/resources after surgery
7. Radiation therapy (RT)
 - Knowledge of RT techniques and management of adverse effects
 - Ensuring the safety and integrity of RT plan
 - Providing patient information and education concerning RT
8. Chemotherapy
 - Knowledge of chemotherapeutic agents
 - Management of adverse effects and monitoring of laboratory analyses
 - Patient and family education (adhering to chemotherapy regimen)
9. Knowledge of vaccine immunotherapy clinical trials
10. Symptom management (vasogenic edema, seizures, venous thromboembolism [VTE], nausea/vomiting, cognitive dysfunction, fatigue, distress)
11. Strategies to decrease impact of physical changes
12. Facilitating rehabilitation
13. Assisting with returning to work and other survivorship issues
14. Management of palliative care and end-of-life needs/preferences

Major Outcomes Considered

- Value of patient assessment for risk profile and prognosis
- Sensitivity and specificity of diagnostic tests
- Effectiveness of medications and other treatments (i.e., radiation and chemotherapy) for symptom and disease management
- Survival time (progression-free and overall)
- Adverse effects of treatment
- Surgical and postoperative outcomes
- Benefits of support and counseling for patients, caregivers, and family members

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A review of literature published between January 2000 and January 2013 was conducted using the PubMed/MEDLINE, CINAHL, Cochrane Review, EMBASE, and Ovid databases with the following search terms: brain tumor, brain neoplasm, glioma, astrocytoma, glioblastoma, oligodendrogliomas, brain metastases, emergent care, diagnostic tests, acute care, magnetic resonance imaging (MRI), diffusion weighted imaging, vasogenic edema, glucocorticoids, corticosteroids, Idh1 mutation, molecular pathogenesis, nephrogenic systemic fibrosis, cisplatin, carboplatin, procarbazine, vincristine, methotrexate, O⁶-methylguanine- DNA methyltransferase (MGMT) promoter, 1p19q (chromosome) codeletion, carmustine wafer, embolization, cortical mapping, hemorrhage, hypertension, cerebrospinal fluid (CSF) leaks, seizures, infection, perilesional edema, brain metastasis, brain tumor radiation therapy, brain tumor chemotherapy, epilepsy, seizure, depression, anxiety, dysphoria, cognitive, fatigue, venous thromboembolism, anti-coagulation, support, quality of life, body image, sexuality, intimacy, nausea and vomiting, steroids, edema, rehabilitation, support, temozolomide, bevacizumab, brain tumor pathology, brain tumor classification, brain tumor incidence, brain tumor metastasis incidence, brain tumor etiology, brain tumor risk factors, brain tumor symptoms and brain tumor molecular biology, malignant brain tumor, survivor, end of life, symptom management, palliative care, and caregivers. Several publications dated earlier than 2000 are included because of their historical clinical significance.

The National Comprehensive Cancer Network's (NCCN) NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) were accessed and incorporated into this document as appropriate and needed.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Data Quality Classification

Class I: Randomized controlled trial (RCTs) without significant limitations or meta-analysis

Class II: RCTs with important limitations (e.g., methodological flaws or inconsistent results) and observational studies (e.g., cohort or case-control)

Class III: Qualitative study, case study, or series

Class IV: Evidence from expert committee reports and expert opinion of the American Association of Neuroscience Nurses (AANN) guideline panel; standards of care and clinical protocols that have been identified

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The Clinical Practice Guidelines and recommendations for practice are established based upon the evaluation of the available evidence. Resources and recommendations must describe the best practices that can enable RNs to provide optimal care for patients with brain tumors.

Rating Scheme for the Strength of the Recommendations

Levels of Recommendation

Level 1: Recommendations are supported by class I evidence.

Level 2: Recommendations are supported by class II evidence.

Level 3: Recommendations are supported by class III and IV evidence.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Peer Review

Description of Method of Guideline Validation

The guideline underwent peer review by a panel of reviewers listed in the original guideline document.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

The recommendations may assist nurses in making appropriate choices when caring for patients with brain tumor.

Potential Harms

- Adverse effects of corticosteroids, including hyperglycemia and steroid-induced diabetes, gastrointestinal distress, immunosuppression, fluid retention and weight gain, proximal myopathy, insomnia, and behavioral changes
- Adverse effects of antiepileptic drugs (AED) including headache, rash, nausea, somnolence, confusion, diplopia, and dizziness
- Complication of craniotomy surgery including infection and meningitis
- Adverse effects (both acute toxicity and late effects) related to brain radiation (see full details in the original guideline document)
- Adverse effects related to chemotherapy (see full details in the original guideline document)
- Drug interactions

Contraindications

Contraindications

- Ferrous-containing implantable devices (automatic implantable cardioverter/defibrillators, pacemakers, etc.) are contraindications to magnetic resonance imaging (MRI).
- Patient selection risk factors or contraindications for awake craniotomy include reduced respiratory function, decreased cardiac output, sleep apnea, emotional instability, or decreased level of consciousness.

Qualifying Statements

Qualifying Statements

- The authors, editors, and publisher of this document neither represent nor guarantee that the practices described herein will, if followed, ensure safe and effective patient care. The authors, editors, and publisher further assume no liability or responsibility in connection with any information or recommendations contained in this document. These recommendations reflect the judgment from the American Association of Neuroscience Nurses regarding the state of general knowledge and practice in our field as of the date of publication and are subject to change based on the availability of new scientific information.
- Adherence to these guidelines is voluntary, and the ultimate determination regarding guideline application must be made by practitioners in light of each patient's individual circumstances. This reference is an essential resource for nurses providing care to the adult patient with a brain tumor. It is not intended to replace formal learning, but rather to augment the clinician's knowledge base and provide a readily accessible reference tool.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

End of Life Care

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

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Guideline Committee

Not stated

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the [American Association of Neuroscience Nurses Web site](#) .

Availability of Companion Documents

The following is available:

- Care of the adult patient with a brain tumor. CPG Web cast. Available from the [American Association of Neuroscience Nurses Web site](#) .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on July 21, 2014. The information was verified by the guideline developer on July 28, 2014.

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